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EXAMINER	
PATEL, ASHOKKUMAR B	
ART UNIT	**PAPER NUMBER**
2154	

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/941,254	HOCHMUTH ET AL.	
	Examiner	Art Unit	
	Ashok B. Patel	2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 are presented for examination.

2. The declaration filed on May 15, 2006 under 37 CFR 1.131 has been considered and found effective to overcome the reference Bialik et al., Provisional Application No. 60/291, 130. However, in order to continue the prosecution, Examiner has provided the following rejection for claims 1-20.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Necka et al. (hereinafter Necka) (US 6, 952, 428) in view of Bunn et al. (hereinafter Bunn)(US 2001/0053159 A1).

Referring to claim 1,

Necka teaches an apparatus for communicating graphics between at least two remotely -located computers across a computer network (Fig. 1, element 16) comprising:

an input for receiving a video signal output from a graphics card of a source computer (Fig.1, elements 20 and 14 providing input as well as output as Necka teaches at col.7, line 6-12," (13) If the data-over-cable system 10 is a bi-directional data-over-cable system, the CM 16 may have an upstream and downstream connection to the CMTS 12 via a cable television connection, a wireless connection or a satellite connection, for instance. FIG. 1 illustrates an exemplary upstream and downstream connection to the CMTS 12 via the cable network 14.");

a memory for storing discrete units of the video signal (col. 8, line 48-51, "An operating environment for each CMTS 12, CM 16, CPE 18, TRAC 24 and other network entities of an exemplary embodiment may include a processing system with at least one high speed processing unit and a memory system.");

the network interface circuit (Fig.1, element 16) configured to format and communicate the video signal over the computer network to a remote computer (col. 6, line 39-52, "Further, the data-over-cable system 10 may be Packet Cable specifications compliant. The Packet Cable standards may be found on the World Wide Web at the URL "www.packetcable.com." The Packet Cable specifications define mechanisms required for supporting voice and video transmission over cable systems. If the data-over-cable system 10 is Packet Cable specification compliant, the CM 16 may comprise an internal media terminal adapter, or a media terminal adapter may otherwise be provided in communications with the CM 16. The media terminal adapter may provide a network interface functionality for transmitting voice or video signals and for converting analog voice inputs or video signals to IP packets using, for instance, the Real Time

Transport protocol."); and an output coupled to the computer network (Fig.1, elements 20 and 14 providing input as well as output as Necka teaches at col.7, line 6-12," (13) If the data-over-cable system 10 is a bi-directional data-over-cable system, the CM 16 may have an upstream and downstream connection to the CMTS 12 via a cable television connection, a wireless connection or a satellite connection, for instance. FIG. 1 illustrates an exemplary upstream and downstream connection to the CMTS 12 via the cable network 14.").

Necka specifically fails to teach a compression circuit for compressing a plurality of the discrete units into a compressed video signal; a network interface circuit coupled to both the compression circuit and the computer network, the network interface circuit configured to communicate the compressed video signal over the computer network to a remote computer.

Bunn teaches the a compression circuit for compressing a plurality of the discrete units into a compressed video signal; a network interface circuit coupled to both the compression circuit and the computer network, the network interface circuit configured to communicate the compressed video signal over the computer network to a remote computer. (Fig.2, element 204, "Compressed Data Packet", page 3, para.[0046]-[0049], "[0046] In embodiments, the input packet 202 can be generated by an application program running on the first data user 106 described above in reference to FIG. 1. For example, an application program running on the first data user 106 may generate voice or data information for transmission over the cable network 112 to a local cable modem or to the Internet. This voice or data information comprises the data payload 212 of the

input packet 202. An application program or operating system routine running on the on the first data user 106 will append the IP header 206, UDP header 208, RTP header 210 and CRC field 214 to the data payload so that it may be transmitted in accordance with standard IP protocols. An Ethernet card within the first data user 106 will further append the 802.3 header to the packet so that the input packet may be transmitted in accordance with standard Ethernet protocols.

[0047] The input packet 202 is transmitted to the cable modem 110, which determines whether or not the header information in the input packet 202 may be suppressed in accordance with a proprietary header suppression scheme. In embodiments, the proprietary header suppression scheme is a protocol-specific header suppression scheme that predictively modifies header fields based on an a priori knowledge of the various protocols with which the headers are associated.[0048] If the header information may be suppressed, the cable modem 110 will suppress the 802.3 header 204, the IP header 206, the UDP header 208 and the RTP header 210. In an embodiment, all of the 802.3, IP, UDP and RTP headers are eliminated and replaced with a single byte reconstruction index. In the instance where the input packet 202 is a voice packet (i.e., the payload 212 is a voice payload), this scheme yields a 14-byte advantage per voice packet over the DOCSIS 1.1 header suppression technique.[0049] By performing header suppression on the input packet 202, the cable modem generates a "compressed" data packet 204 for transmission over the DOCSIS network. As shown in FIG. 2, the compressed data packet 204 includes a new 802.3 header 232, a proprietary header 216, a payload 218, and a new CRC field 234. In embodiments, the

payload 212 is not compressed and therefore the payload 218 is identical to the payload 212 of the input packet 202.")

Therefore, it would have been obvious to one of ordinary skill in this art at the time the invention was made to implement the compression technique and capabilities of Bunn's cable modem into the Cable modem of Necka such that the individual video packets are compressed before transmission.

It would have been also obvious because " Such a configuration would provide for improved bandwidth utilization on the cable network." as taught by Bunn at para.[0070].

Referring to claim 2,

Necka teaches an apparatus for communicating graphics across a computer network (Fig. 1, element 16) comprising:

an input for receiving a video signal(Fig.1, elements 20 and 14 providing input as well as output as Necka teaches at col.7, line 6-12," (13) If the data-over-cable system 10 is a bi-directional data-over-cable system, the CM 16 may have an upstream and downstream connection to the CMTS 12 via a cable television connection, a wireless connection or a satellite connection, for instance. FIG. 1 illustrates an exemplary upstream and downstream connection to the CMTS 12 via the cable network 14.");

a memory for storing discrete units of the video signal (col. 8, line 48-51, "An operating environment for each CMTS 12, CM 16, CPE 18, TRAC 24 and other network entities of an exemplary embodiment may include a processing system with at least one high speed processing unit and a memory system.");

the network interface circuit (Fig.1, element 16) configured to format and communicate the video signal over the computer network to a remote computer (col. 6, line 39-52, "Further, the data-over-cable system 10 may be Packet Cable specifications compliant. The Packet Cable standards may be found on the World Wide Web at the URL "www.packetcable.com." The Packet Cable specifications define mechanisms required for supporting voice and video transmission over cable systems. If the data-over-cable system 10 is Packet Cable specification compliant, the CM 16 may comprise an internal media terminal adapter, or a media terminal adapter may otherwise be provided in communications with the CM 16. The media terminal adapter may provide a network interface functionality for transmitting voice or video signals and for converting analog voice inputs or video signals to IP packets using, for instance, the Real Time Transport protocol.");

Necka specifically fails to teach a compression circuit for compressing a plurality of the discrete units into a compressed video signal; a network interface circuit coupled to both the compression circuit and the computer network, the network interface circuit configured to communicate the compressed video signal over the computer network to a remote computer.

Bunn teaches the a compression circuit for compressing a plurality of the discrete units into a compressed video signal; a network interface circuit coupled to both the compression circuit and the computer network, the network interface circuit configured to communicate the compressed video signal over the computer network to a remote computer. (Fig.2, element 204, "Compressed Data Packet", page 3, para.[0046]-[0049],

"[0046] In embodiments, the input packet 202 can be generated by an application program running on the first data user 106 described above in reference to FIG. 1. For example, an application program running on the first data user 106 may generate voice or data information for transmission over the cable network 112 to a local cable modem or to the Internet. This voice or data information comprises the data payload 212 of the input packet 202. An application program or operating system routine running on the on the first data user 106 will append the IP header 206, UDP header 208, RTP header 210 and CRC field 214 to the data payload so that it may be transmitted in accordance with standard IP protocols. An Ethernet card within the first data user 106 will further append the 802.3 header to the packet so that the input packet may be transmitted in accordance with standard Ethernet protocols.

[0047] The input packet 202 is transmitted to the cable modem 110, which determines whether or not the header information in the input packet 202 may be suppressed in accordance with a proprietary header suppression scheme. In embodiments, the proprietary header suppression scheme is a protocol-specific header suppression scheme that predictively modifies header fields based on an a priori knowledge of the various protocols with which the headers are associated.[0048] If the header information may be suppressed, the cable modem 110 will suppress the 802.3 header 204, the IP header 206, the UDP header 208 and the RTP header 210. In an embodiment, all of the 802.3, IP, UDP and RTP headers are eliminated and replaced with a single byte reconstruction index. In the instance where the input packet 202 is a voice packet (i.e., the payload 212 is a voice payload), this scheme yields a 14-byte

advantage per voice packet over the DOCSIS 1.1 header suppression technique.[0049] By performing header suppression on the input packet 202, the cable modem generates a "compressed" data packet 204 for transmission over the DOCSIS network. As shown in FIG. 2, the compressed data packet 204 includes a new 802.3 header 232, a proprietary header 216, a payload 218, and a new CRC field 234. In embodiments, the payload 212 is not compressed and therefore the payload 218 is identical to the payload 212 of the input packet 202.")

Therefore, it would have been obvious to one of ordinary skill in this art at the time the invention was made to implement the compression technique and capabilities of Bunn's cable modem into the Cable modem of Necka such that the individual video packets are compressed before transmission.

It would have been also obvious because " Such a configuration would provide for improved bandwidth utilization on the cable network." as taught by Bunn at para.[0070].

Referring to claim 3,

Necka teaches the apparatus of claim 2, wherein the video signal is in compliance with a Digital Visual Interface (DVI) standard. (col. 9, line 31-55)

Referring to claim 4,

Necka teaches the apparatus of claim 2, wherein the video signal is an analog video signal.(col. 6, line 39-52)

Referring to claim 5,

Necka teaches the apparatus of claim 2, further comprising a circuit for converting an analog video signal into a digital video signal. (col. 6, line 39-52, "Further, the data-over-cable system 10 may be Packet Cable specifications compliant. The Packet Cable standards may be found on the World Wide Web at the URL "www.packetcable.com." The Packet Cable specifications define mechanisms required for supporting voice and video transmission over cable systems. If the data-over-cable system 10 is Packet Cable specification compliant, the CM 16 may comprise an internal media terminal adapter, or a media terminal adapter may otherwise be provided in communications with the CM 16. The media terminal adapter may provide a network interface functionality for transmitting voice or video signals and for converting analog voice inputs or video signals to IP packets using, for instance, the Real Time Transport protocol.")

Referring to claim 6,

Necka teaches the apparatus of claim 2, wherein the computer network comprises a local area network (LAN) (col. 7, line 57-63, "The data-over-cable system 10 may comprise a plurality of network interfaces. As shown in FIG. 1, the TRAC 24 is connected to a data network 28 (e.g. the Internet, an intranet, a LAN or a WAN, for instance) via a TRAC-Network System Interface 30 ("TRAC-NSI"). The CMTS 12 is connected to the data network 28 via a CMTS-Network System Interface ("CMTS-NSI") 32.".)

Referring to claim 7,

Necka teaches the apparatus of claim 2, wherein the computer network comprises a wide area network (WAN). (col. 7, line 57-63, "The data-over-cable system 10 may comprise a plurality of network interfaces. As shown in FIG. 1, the TRAC 24 is connected to a data network 28 (e.g. the Internet, an intranet, a LAN or a WAN, for instance) via a TRAC-Network System Interface 30 ("TRAC-NSI"). The CMTS 12 is connected to the data network 28 via a CMTS-Network System Interface ("CMTS-NSI") 32.".)

Referring to claim 8,

Necka teaches an apparatus of claim 2, wherein the network interface circuit is configured to format video signal into a plurality of Internet Protocol (IP) packets that are communicated over the computer network to the remote computer. (col. 6, line 39-52, "Further, the data-over-cable system 10 may be Packet Cable specifications compliant. The Packet Cable standards may be found on the World Wide Web at the URL "www.packetcable.com." The Packet Cable specifications define mechanisms required for supporting voice and video transmission over cable systems. If the data-over-cable system 10 is Packet Cable specification compliant, the CM 16 may comprise an internal media terminal adapter, or a media terminal adapter may otherwise be provided in communications with the CM 16. The media terminal adapter may provide a network interface functionality for transmitting voice or video signals and for converting analog voice inputs or video signals to IP packets using, for instance, the Real Time Transport protocol.")

Necka specifically fails to teach the compression of the packets.

Bunn teaches the compression of the packets (Fig.2, element 204, "Compressed Data Packet", page 3, para.[0046]-[0049], "[0046] In embodiments, the input packet 202 can be generated by an application program running on the first data user 106 described above in reference to FIG. 1. For example, an application program running on the first data user 106 may generate voice or data information for transmission over the cable network 112 to a local cable modem or to the Internet. This voice or data information comprises the data payload 212 of the input packet 202. An application program or operating system routine running on the on the first data user 106 will append the IP header 206, UDP header 208, RTP header 210 and CRC field 214 to the data payload so that it may be transmitted in accordance with standard IP protocols. An Ethernet card within the first data user 106 will further append the 802.3 header to the packet so that the input packet may be transmitted in accordance with standard Ethernet protocols.

[0047] The input packet 202 is transmitted to the cable modem 110, which determines whether or not the header information in the input packet 202 may be suppressed in accordance with a proprietary header suppression scheme. In embodiments, the proprietary header suppression scheme is a protocol-specific header suppression scheme that predictively modifies header fields based on an a priori knowledge of the various protocols with which the headers are associated.[0048] If the header information may be suppressed, the cable modem 110 will suppress the 802.3 header 204, the IP header 206, the UDP header 208 and the RTP header 210. In an embodiment, all of the 802.3, IP, UDP and RTP headers are eliminated and replaced

with a single byte reconstruction index. In the instance where the input packet 202 is a voice packet (i.e., the payload 212 is a voice payload), this scheme yields a 14-byte advantage per voice packet over the DOCSIS 1.1 header suppression technique.[0049] By performing header suppression on the input packet 202, the cable modem generates a "compressed" data packet 204 for transmission over the DOCSIS network. As shown in FIG. 2, the compressed data packet 204 includes a new 802.3 header 232, a proprietary header 216, a payload 218, and a new CRC field 234. In embodiments, the payload 212 is not compressed and therefore the payload 218 is identical to the payload 212 of the input packet 202.")

Therefore, it would have been obvious to one of ordinary skill in this art at the time the invention was made to implement the compression technique and capabilities of Bunn's cable modem into the Cable modem of Necka such that the individual video packets are compressed before transmission.

It would have been also obvious because " Such a configuration would provide for improved bandwidth utilization on the cable network." as taught by Bunn at para.[0070].

Referring to claim 9,

Necka teaches the apparatus of claim 2, further comprising a second input for receiving a second video signal. (col. 7, line 4-5, "FIG. 1 illustrates one CPE entity 18. However the CM 16 is typically coupled to multiple CPE entities. " Thereby more than one video signals are anticipated.)

Referring to claim 10,

Keeping in mind the teachings of Necka as stated above, Necka specifically fails to teach the apparatus of claim 9, wherein the compression circuit is further configured to separately compress a plurality of discrete units for each of the video signals.

Bunn teaches the compression circuit is further configured to separately compress a plurality of discrete units for each of the video signals (Fig.2, element 204, "Compressed Data Packet", page 3, para.[0046]-[0049], "[0046] In embodiments, the input packet 202 can be generated by an application program running on the first data user 106 described above in reference to FIG. 1. For example, an application program running on the first data user 106 may generate voice or data information for transmission over the cable network 112 to a local cable modem or to the Internet. This voice or data information comprises the data payload 212 of the input packet 202. An application program or operating system routine running on the on the first data user 106 will append the IP header 206, UDP header 208, RTP header 210 and CRC field 214 to the data payload so that it may be transmitted in accordance with standard IP protocols. An Ethernet card within the first data user 106 will further append the 802.3 header to the packet so that the input packet may be transmitted in accordance with standard Ethernet protocols.

[0047] The input packet 202 is transmitted to the cable modem 110, which determines whether or not the header information in the input packet 202 may be suppressed in accordance with a proprietary header suppression scheme. In embodiments, the proprietary header suppression scheme is a protocol-specific header suppression scheme that predictively modifies header fields based on an a priori

knowledge of the various protocols with which the headers are associated.[0048] If the header information may be suppressed, the cable modem 110 will suppress the 802.3 header 204, the IP header 206, the UDP header 208 and the RTP header 210. In an embodiment, all of the 802.3, IP, UDP and RTP headers are eliminated and replaced with a single byte reconstruction index. In the instance where the input packet 202 is a voice packet (i.e., the payload 212 is a voice payload), this scheme yields a 14-byte advantage per voice packet over the DOCSIS 1.1 header suppression technique.[0049] By performing header suppression on the input packet 202, the cable modem generates a "compressed" data packet 204 for transmission over the DOCSIS network. As shown in FIG. 2, the compressed data packet 204 includes a new 802.3 header 232, a proprietary header 216, a payload 218, and a new CRC field 234. In embodiments, the payload 212 is not compressed and therefore the payload 218 is identical to the payload 212 of the input packet 202.")

Therefore, it would have been obvious to one of ordinary skill in this art at the time the invention was made to implement the compression technique and capabilities of Bunn's cable modem into the Cable modem of Necka such that the individual video packets are compressed before transmission.

It would have been also obvious because " Such a configuration would provide for improved bandwidth utilization on the cable network." as taught by Bunn at para.[0070].

Referring to claim 11,

Necka teaches the apparatus of claim 2, wherein the network interface circuit is

configured to format and communicate separately video signals to different remote computers, such that a first remote computer receives a first video signal and a second remote computer receives a second video signal. (col. 7, line 57-63, "The data-over-cable system 10 may comprise a plurality of network interfaces. As shown in FIG. 1, the TRAC 24 is connected to a data network 28 (e.g. the Internet, an intranet, a LAN or a WAN, for instance) via a TRAC-Network System Interface 30 ("TRAC-NSI"). The CMTS 12 is connected to the data network 28 via a CMTS-Network System Interface ("CMTS-NSI") 32." Col. 11, line 5-11, "According to an exemplary embodiment of the present invention, the CM 16 may support transmission and reception of IP datagrams as specified by RFC-791. The CM 16 may be also configured to filter IP datagrams with IP addresses assigned to the CM 16 or CPE 18. Further, the CMTS 12 and the TRAC 24 may also perform filtering of IP datagrams." Thereby communication with more than one computers on Fig.1, element 28 is anticipated.)

Necka specifically fails to teach the compression of the packets.

Bunn teaches the compression of the packets (Fig.2, element 204, "Compressed Data Packet", page 3, para.[0046]-[0049], "[0046] In embodiments, the input packet 202 can be generated by an application program running on the first data user 106 described above in reference to FIG. 1. For example, an application program running on the first data user 106 may generate voice or data information for transmission over the cable network 112 to a local cable modem or to the Internet. This voice or data information comprises the data payload 212 of the input packet 202. An application program or operating system routine running on the on the first data user 106 will

append the IP header 206, UDP header 208, RTP header 210 and CRC field 214 to the data payload so that it may be transmitted in accordance with standard IP protocols. An Ethernet card within the first data user 106 will further append the 802.3 header to the packet so that the input packet may be transmitted in accordance with standard Ethernet protocols.

[0047] The input packet 202 is transmitted to the cable modem 110, which determines whether or not the header information in the input packet 202 may be suppressed in accordance with a proprietary header suppression scheme. In embodiments, the proprietary header suppression scheme is a protocol-specific header suppression scheme that predictively modifies header fields based on an a priori knowledge of the various protocols with which the headers are associated.[0048] If the header information may be suppressed, the cable modem 110 will suppress the 802.3 header 204, the IP header 206, the UDP header 208 and the RTP header 210. In an embodiment, all of the 802.3, IP, UDP and RTP headers are eliminated and replaced with a single byte reconstruction index. In the instance where the input packet 202 is a voice packet (i.e., the payload 212 is a voice payload), this scheme yields a 14-byte advantage per voice packet over the DOCSIS 1.1 header suppression technique.[0049] By performing header suppression on the input packet 202, the cable modem generates a "compressed" data packet 204 for transmission over the DOCSIS network. As shown in FIG. 2, the compressed data packet 204 includes a new 802.3 header 232, a proprietary header 216, a payload 218, and a new CRC field 234. In embodiments, the

payload 212 is not compressed and therefore the payload 218 is identical to the payload 212 of the input packet 202.")

Therefore, it would have been obvious to one of ordinary skill in this art at the time the invention was made to implement the compression technique and capabilities of Bunn's cable modem into the Cable modem of Necka such that the individual video packets are compressed before transmission.

It would have been also obvious because " Such a configuration would provide for improved bandwidth utilization on the cable network." as taught by Bunn at para.[0070].

Referring to claim 12,

Necka teaches apparatus of claim 2, further comprising a plurality of network interface circuits, each network interface circuit being coupled to the computer network, each network interface circuit being configured to format and communicate the video signal over the computer network to a remote computer. (col. 7, line 57-63, "The data-over-cable system 10 may comprise a plurality of network interfaces. As shown in FIG. 1, the TRAC 24 is connected to a data network 28 (e.g. the Internet, an intranet, a LAN or a WAN, for instance) via a TRAC-Network System Interface 30 ("TRAC-NSI"). The CMTS 12 is connected to the data network 28 via a CMTS-Network System Interface ("CMTS-NSI") 32." Col. 11, line 5-11, "According to an exemplary embodiment of the present invention, the CM 16 may support transmission and reception of IP datagrams as specified by RFC-791. The CM 16 may be also configured to filter IP datagrams with IP addresses assigned to the CM 16 or CPE 18. Further, the CMTS 12 and the TRAC

24 may also perform filtering of IP datagrams." Thereby communication with more than one computers on Fig.1, element 28 is anticipated.)

Necka specifically fails to teach the compression of the packets.

Bunn teaches the compression of the packets (Fig.2, element 204, "Compressed Data Packet", page 3, para.[0046]-[0049], "[0046] In embodiments, the input packet 202 can be generated by an application program running on the first data user 106 described above in reference to FIG. 1. For example, an application program running on the first data user 106 may generate voice or data information for transmission over the cable network 112 to a local cable modem or to the Internet. This voice or data information comprises the data payload 212 of the input packet 202. An application program or operating system routine running on the on the first data user 106 will append the IP header 206, UDP header 208, RTP header 210 and CRC field 214 to the data payload so that it may be transmitted in accordance with standard IP protocols. An Ethernet card within the first data user 106 will further append the 802.3 header to the packet so that the input packet may be transmitted in accordance with standard Ethernet protocols.

[0047] The input packet 202 is transmitted to the cable modem 110, which determines whether or not the header information in the input packet 202 may be suppressed in accordance with a proprietary header suppression scheme. In embodiments, the proprietary header suppression scheme is a protocol-specific header suppression scheme that predictively modifies header fields based on an a priori knowledge of the various protocols with which the headers are associated.[0048] If the

header information may be suppressed, the cable modem 110 will suppress the 802.3 header 204, the IP header 206, the UDP header 208 and the RTP header 210. In an embodiment, all of the 802.3, IP, UDP and RTP headers are eliminated and replaced with a single byte reconstruction index. In the instance where the input packet 202 is a voice packet (i.e., the payload 212 is a voice payload), this scheme yields a 14-byte advantage per voice packet over the DOCSIS 1.1 header suppression technique.[0049] By performing header suppression on the input packet 202, the cable modem generates a "compressed" data packet 204 for transmission over the DOCSIS network. As shown in FIG. 2, the compressed data packet 204 includes a new 802.3 header 232, a proprietary header 216, a payload 218, and a new CRC field 234. In embodiments, the payload 212 is not compressed and therefore the payload 218 is identical to the payload 212 of the input packet 202.")

Therefore, it would have been obvious to one of ordinary skill in this art at the time the invention was made to implement the compression technique and capabilities of Bunn's cable modem into the Cable modem of Necka such that the individual video packets are compressed before transmission.

It would have been also obvious because " Such a configuration would provide for improved bandwidth utilization on the cable network." as taught by Bunn at para.[0070].

5. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Necka et al. (hereinafter Necka) (US 6, 952, 428) in view of Bunn et al.

(hereinafter Bunn)(US 2001/0053159 A1) as applied to claim 2 above, and further in view of Rakib et al. (hereinafter Rakib)(US 2004/0172658 A1)

Referring to claim 13 and 14,

Keeping in mind the teachings of the references Necka and Bunn as stated above in claim 2, both of these references fail to teach an apparatus of claim 2, wherein the apparatus comprises a connector for direct connection to a source computer that supplies the video signal, wherein the connector comprises signals carrying power signals for powering the apparatus and the apparatus of claim 13, wherein the connector is an edge connector configured to directly plug into a card slot of a motherboard of the source computer.

Rakib teaches at para.[0041], "The second advantage of the modular construction of the gateway is the property it has of protecting the subscriber's investment in the gateway by decoupling the physical structure and software of the shared components of the gateway from changes in the particular subscription networks. As these subscription networks evolve, there are likely to be changes in the protocols, physical media, packet structure etc. which are unpredictable in nature. Further, it may evolve over time with competitive forces similar to those acting on the long distance carriers that competition alters the picture as to which subscription network is the best provider of each particular service in which the subscriber is interested. If ADSL no longer is the best provider of telephony services, and the HFC networks offer a better deal, the consumer does not have to buy an entirely new gateway, but can simply remove the ADSL interface card and substitute a cable modem

card to interface with the HFC network if a cable modem card is not already present. Likewise, if ADSL with Carrierless Amplitude/Phase modulation (CAP) give way to Discrete Multitone (DMT) modulation as the new standard, the user can simply swap out the CAP based ADSL expansion module for a DMT based module." Thus Rakib teaches the limitations of claims 13 and 14 by teachings "a cable modem card that replaceable into the gateway (computer).)

Therefore, it would have been obvious to one of ordinary skill in this art at the time the invention was made to install "a cable modem card" including the capabilities of Bunn into the subscriber's computer of Necka such that not only the individual video packets are compressed before transmission, but also because the concept of "cable modem card is of a paramount importance to be recognized by persons of ordinary skill in the art along with the elucidation that "The second advantage of the modular construction of the gateway is the property it has of protecting the subscriber's investment in the gateway by decoupling the physical structure and software of the shared components of the gateway from changes in the particular subscription networks. As these subscription networks evolve, there are likely to be changes in the protocols, physical media, packet structure etc. which are unpredictable in nature."

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless-

> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section

351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 15-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Necka et al. (hereinafter Necka) (US 6, 952, 428).

Referring to claim 15,

Necka teaches an apparatus for communicating graphics across a computer network (Fig. 1, element 16)

comprising:

an input for receiving a video signal (Fig.1, elements 20 and 14 providing input as well as output as Necka teaches at col.7, line 6-12," (13) If the data-over-cable system 10 is a bi-directional data-over-cable system, the CM 16 may have an upstream and downstream connection to the CMTS 12 via a cable television connection, a wireless connection or a satellite connection, for instance. FIG. 1 illustrates an exemplary upstream and downstream connection to the CMTS 12 via the cable network 14."); and

a network interface circuit (Fig.1, element 16) coupled to both the input and the computer network (Fig.1, elements 20 and 14 providing input as well as output as Necka teaches at col.7, line 6-12," (13) If the data-over-cable system 10 is a bi-directional data-over-cable system, the CM 16 may have an upstream and downstream connection to the CMTS 12 via a cable television connection, a wireless connection or a satellite connection, for instance. FIG. 1 illustrates an exemplary upstream and downstream connection to the CMTS 12 via the cable network 14."), the network interface circuit configured to format and communicate the video signal over the

computer network to a remote computer (col. 6, line 39-52, "Further, the data-over-cable system 10 may be Packet Cable specifications compliant. The Packet Cable standards may be found on the World Wide Web at the URL "www.packetcable.com." The Packet Cable specifications define mechanisms required for supporting voice and video transmission over cable systems. If the data-over-cable system 10 is Packet Cable specification compliant, the CM 16 may comprise an internal media terminal adapter, or a media terminal adapter may otherwise be provided in communications with the CM 16. The media terminal adapter may provide a network interface functionality for transmitting voice or video signals and for converting analog voice inputs or video signals to IP packets using, for instance, the Real Time Transport protocol.")

Referring to claim 16,

Necka teaches the apparatus of claim 15, wherein the network interface circuit is configured to format the video signal into a plurality of Internet Protocol (IP) packets that are communicated over the computer network to the remote computer (col. 6, line 39-52, "Further, the data-over-cable system 10 may be Packet Cable specifications compliant. The Packet Cable standards may be found on the World Wide Web at the URL "www.packetcable.com." The Packet Cable specifications define mechanisms required for supporting voice and video transmission over cable systems. If the data-over-cable system 10 is Packet Cable specification compliant, the CM 16 may comprise an internal media terminal adapter, or a media terminal adapter may otherwise be provided in communications with the CM 16. The media terminal adapter may provide a network interface functionality for transmitting voice or video signals and for converting

analog voice inputs or video signals to IP packets using, for instance, the Real Time Transport protocol.").

Referring to claim 17,

Necka teaches the apparatus of claim 15, further comprising a second input for receiving a second video signal. (col. 7, line 4-5, "FIG. 1 illustrates one CPE entity 18. However the CM 16 is typically coupled to multiple CPE entities. " Thereby more than one video signals are anticipated.)

Referring to claim 18,

Necka teaches the apparatus of claim 1 5, wherein the network interface circuit is configured to separately format and communicate each received video signal to different remote computers, such that a first remote computer receives the a first video signal and a second remote computer receives a second video signal. (col. 7, line 57-63, "The data-over-cable system 10 may comprise a plurality of network interfaces. As shown in FIG. 1, the TRAC 24 is connected to a data network 28 (e.g. the Internet, an intranet, a LAN or a WAN, for instance) via a TRAC-Network System Interface 30 ("TRAC-NSI"). The CMTS 12 is connected to the data network 28 via a CMTS-Network System Interface ("CMTS-NSI") 32." Col. 11, line 5-11, "According to an exemplary embodiment of the present invention, the CM 16 may support transmission and reception of IP datagrams as specified by RFC-791. The CM 16 may be also configured to filter IP datagrams with IP addresses assigned to the CM 16 or CPE 18. Further, the CMTS 12 and the TRAC 24 may also perform filtering of IP datagrams."

Thereby communication with more than one computers on Fig.1, element 28 is anticipated.)

Referring to claim 19,

Necka teaches a method for communicating graphics across a computer network comprising:

receiving a video signal from a graphics card of a source computer (Fig.1, elements 20 and 14 providing input as well as output as Necka teaches at col.7, line 6-12," (13) If the data-over-cable system 10 is a bi-directional data-over-cable system, the CM 16 may have an upstream and downstream connection to the CMTS 12 via a cable television connection, a wireless connection or a satellite connection, for instance. FIG. 1 illustrates an exemplary upstream and downstream connection to the CMTS 12 via the cable network 14."); converting the video signal into a format suitable for communication over a computer network; and communicating the converted video signal across the computer network to a remote computer(col. 6, line 39-52, "Further, the data-over-cable system 10 may be Packet Cable specifications compliant. The Packet Cable standards may be found on the World Wide Web at the URL "www.packetcable.com." The Packet Cable specifications define mechanisms required for supporting voice and video transmission over cable systems. If the data-over-cable system 10 is Packet Cable specification compliant, the CM 16 may comprise an internal media terminal adapter, or a media terminal adapter may otherwise be provided in communications with the CM 16. The media terminal adapter may provide a network interface functionality for transmitting voice or video signals and for converting analog

voice inputs or video signals to IP packets using, for instance, the Real Time Transport protocol.")

Referring to claim 20,

Necka teaches the method of claim 19, wherein the step of converting comprises forming a plurality of Internet Protocol (IP) packets collectively embodying the video signal (col. 6, line 39-52, "Further, the data-over-cable system 10 may be Packet Cable specifications compliant. The Packet Cable standards may be found on the World Wide Web at the URL "www.packetcable.com." The Packet Cable specifications define mechanisms required for supporting voice and video transmission over cable systems. If the data-over-cable system 10 is Packet Cable specification compliant, the CM 16 may comprise an internal media terminal adapter, or a media terminal adapter may otherwise be provided in communications with the CM 16. The media terminal adapter may provide a network interface functionality for transmitting voice or video signals and for converting analog voice inputs or video signals to IP packets using, for instance, the Real Time Transport protocol.").

Conclusion

Examiner's note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the

claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok B. Patel whose telephone number is (571) 272-3972. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John A. Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abp

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